ABSTRACT OF THE DISCLOSURE

An angle modulating portion 1 converts an inputted electrical signal into a predetermined angle-modulated signal. An optical modulating portion 2 converts the angle-modulated signal outputted from the angle modulating portion 1 into an optical-modulated signal and sends the optical-modulated signal to an optical waveguide portion 3. An interference portion 6 separates the optical-modulated signal transmitted through the optical waveguide portion 3 into two optical signals having predetermined difference in propagation delay and then combines the optical signals. An optical/electrical converting portion 4 subjects the combined optical signal to homodyne detection, to acquire a demodulated signal of the original electrical signal and output the electrical signal. That is, the interference portion 6 and the optical/electrical converting portion 4 constitute a delayed detection system of an optical signal, so that the delayed detection system performs conversion processing of an optical signal into an electrical signal and angle demodulation processing simultaneously. In this way, a signal with a wide-band and a high-frequency can be acquired by demodulation without electrical part for wide-bands and high-frequencies.